

Amendment and Response

Applicants: Andrew Harvey Barr et al.

Serial No.: 10/621,925

Filed: July 17, 2003

Docket No.: 200308576-1 (H300.213.101)

Title: ALTERNATING VOIDED AREAS OF ANTI-PADS

REMARKS

The following remarks are made in response to the Office Action mailed June 13, 2005. Claims 1-31 were rejected. Claims 1-31 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 103

The Examiner rejected claims 1-31 under 35 U.S.C. § 103(a) as being unpatentable over the Oggioni et al. U.S. Patent No. 6,710,258.

Applicants submit that the Oggioni et al. patent fails to teach or suggest the invention of independent claim 1. Independent claim 1 includes the limitation “wherein the first voided area does not completely overlap the second voided area.” The Examiner admits that the Oggioni et al. patent does not specifically state that the first voided area does not completely overlap the second voided area. The Examiner submits, however, that the Oggioni et al. patent:

teaches that when the dielectric layers of the PCB are different thicknesses, each of the “anti-pad” can be individually crafted to achieve the desired impedance matching (see col. 4, lines 50 – col. 5, line 20). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to form the anti-pads in the invention of Oggioni et al. such that the voids do not completely overlap. The motivation for doing so would have been to provide equivalent shielding in layers having different dielectric thicknesses. (Office Action, page 3).

Individually crafting the anti-pads to achieve the desired impedance matching does not teach or suggest that the first voided area does not completely overlap the second voided area. Impedance matching is not affected by the overlapping of voided areas. The Oggioni et al. patent figures and text do not provide any indication that the first voided area does not completely overlap the second voided area. Instead, the Oggioni et al. patent figures illustrate that the voided areas are aligned. Therefore, independent claim 1 is believed to be allowable over the Oggioni et al. patent.

Independent claims 8, 15, and 24 all include the limitation “wherein the first orientation is offset from the second orientation.” The Examiner admits that the Oggioni et

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al. patent does not specifically state that the first orientation is offset from the second orientation. The Examiner provides similar reasons as to the rejection to independent claim 1 based on the Oggioni et al. patent teaching that when the dielectric layers of the PCB are different thicknesses, each of the anti-pads can be individually crafted to achieve the desired impedance matching.

Similar to reasons discussed above with reference to independent claim 1, individually crafting the anti-pads to achieve the desired impedance matching does not teach or suggest that the first orientation is offset from the second orientation. Impedance matching is not affected by the first orientation being offset from the second orientation. The Oggioni et al. patent figures and text do not provide any indication that the first orientation is offset from the second orientation. Instead, the Oggioni et al. patent figures illustrate that the first orientation of the first partially voided anti-pad is aligned with the second orientation of the second partially voided anti-pad, such that the voided areas are aligned. Therefore, independent claims 8, 15, and 24 are believed to be allowable over the Oggioni et al. patent.

Dependent claims 2-7 further define patentably distinct independent claim 1. Dependent claims 9-14 further define patentably distinct independent claim 8. Dependent claims 16-23 further define patentably distinct independent claim 15. Dependent claims 25-31 further define patentably distinct independent claim 24. Accordingly, these dependent claims are also believed to be allowable over the Oggioni et al. patent.

In addition, the Oggioni et al. patent fails to teach or suggest the first and second anti-pads are longer in a first direction than in a second direction (claim 4); wherein the first pattern comprises a screen pattern (claims 14 and 30); wherein the first length and the first width are not equal (claim 16); wherein the second length and the second width are not equal (claim 17); wherein the first length substantially equals the second length and the first width equals the second width (claim 20); wherein the first and second anti-pads are substantially oval shaped (claims 21 and 26); and wherein the first orientation is substantially perpendicular to the second orientation (claim 22).

The Oggioni et al. patent states that the arrangement of the via-hole at the center of the rings ensures that no asymmetry is introduced. (Col. 5, lines 49-51). These claimed shapes would introduce asymmetry. In addition, while the Oggioni et al. patent states that the

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rings may be comprised of square or other polygonal shape frames (Col. 6, lines 7-8), the Oggioni et al. patent fails to teach or suggest the claimed shapes and/or patterns.

Further, dependent claim 23 includes the limitations “a second via signal barrel parallel to the first via signal barrel and transecting the first and second conductive planes; a third anti-pad positioned between the second via signal barrel and the first conductive plane, the third anti-pad having a third orientation; and a fourth anti-pad positioned between the second via signal barrel and the second conductive plane, the fourth anti-pad having a fourth orientation; wherein the first and third orientations are substantially identical and adapted to allow a signal trace between the first and third anti-pads on an adjacent signal plane.” It appears the Examiner has failed to address this claim.

In view of the above, Applicant’s respectfully request that the rejections to claims 1-31 under 35 U.S.C. § 103 be withdrawn and that these claims be allowed.

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CONCLUSION

In view of the above, Applicants respectfully submits that pending claims 1-31 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1-31 is respectfully requested.

No fees are required under 37 C.F.R. 1.16(h)(i). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 08-2025.

The Examiner is invited to contact the Applicants's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to either Patrick G. Billig at Telephone No. (612) 573-2003, Facsimile No. (612) 573-2005 or David A. Plettner at Telephone No. (408) 447-3013, Facsimile No. (408) 447-0854. In addition, all correspondence should continue to be directed to the following address:

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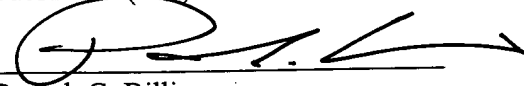
Respectfully submitted,

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CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 13 day of September, 2005.

By 
Name: Patrick G. Billig